# Node Reduction through Artificial Intelligence Inferences using Graphology and SigmaJS: A Case Study on Hypertextual Conversations in Freight Train Graffiti in the North American Region.

Angel Abundis
Communication Studies Master

# Node Reduction through Artificial Intelligence Inferences using Graphology and SigmaJS: A Case Study on Hypertextual Conversations in Freight Train Graffiti in the North American Region.

afeks_rivas

afeks_rivas 💚 Afeks #paintforfun #fr8 #afeks #freighttrain #graffiti #darkknight #lolc #kbt #neversleep @nicofex 📷🔥👌
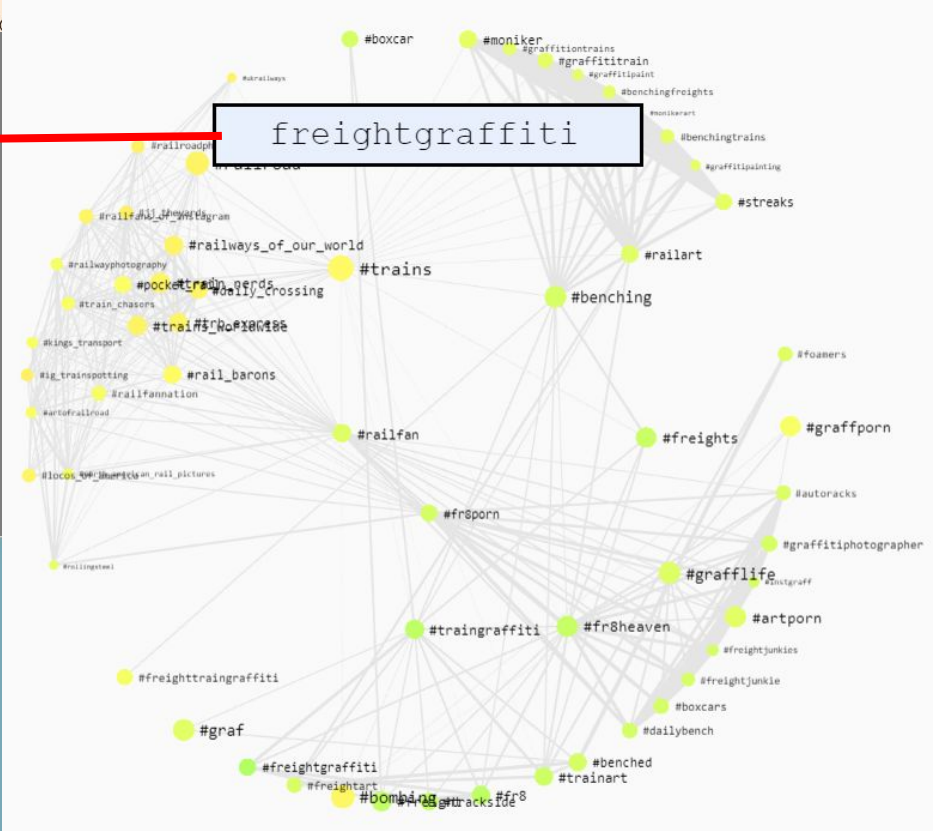
86 sem

esnalei1230 🔥🔥🔥🔥🔥

86 sem    1 Me gusta    Responder

Les gusta a graffhistory_mx_1 y 1,108 personas más

22 DE NOVIEMBRE DE 2019

Agrega un comentario...    Publicar

freightgraffiti

#boxcar #moniker #graffitiontrains #graffititrain #graffitipaint #benchingfreights #railways #monikerart #benchingtrains #railroadph #graffitipainting #railroad #streaks #rail #hashhishinstagram #railways_of_our_world #railart #railwayphotography #trains #pocketrain_nerds #daily_crossing #benching #train_chasers #trainofinstagram #kings_transport #rail_barons #ig_trainspotting #railfannation #foamers #artofrailroad #railfan #freights #graffporn #locos_sudamerica #autoracks #rollingsteel #graffitiphotographer #fr8porn #grafflife #lostgraff #traingraffiti #fr8heaven #artporn #freightjunkies #freighttraingraffiti #freightjunkie #boxcars #graf #dailybench #freightgraffiti #benched #freightart #trainart #bombing #fr8 #freighttrackside

St. Louis

Dallas

Nueva Orleans

Monterrey    Matamoros

Veracruz

CDMX

N

# A Case Study on

## Hypertextual Conversations in Freight Train Graffiti in the North American Region.

**IG users**  **IG posts**  **IG hashtags**



fokografo+28851158479

benjisgra

graffiti

street

sweruno+3158693248465455627_50

pickuplines

Node Reduction through

Artificial Intelligence Inferences

using Graphology and SigmaJS:

**spaCy || Tensorflow** - Python

**Graphology + Sigma.JS** - JavaScript
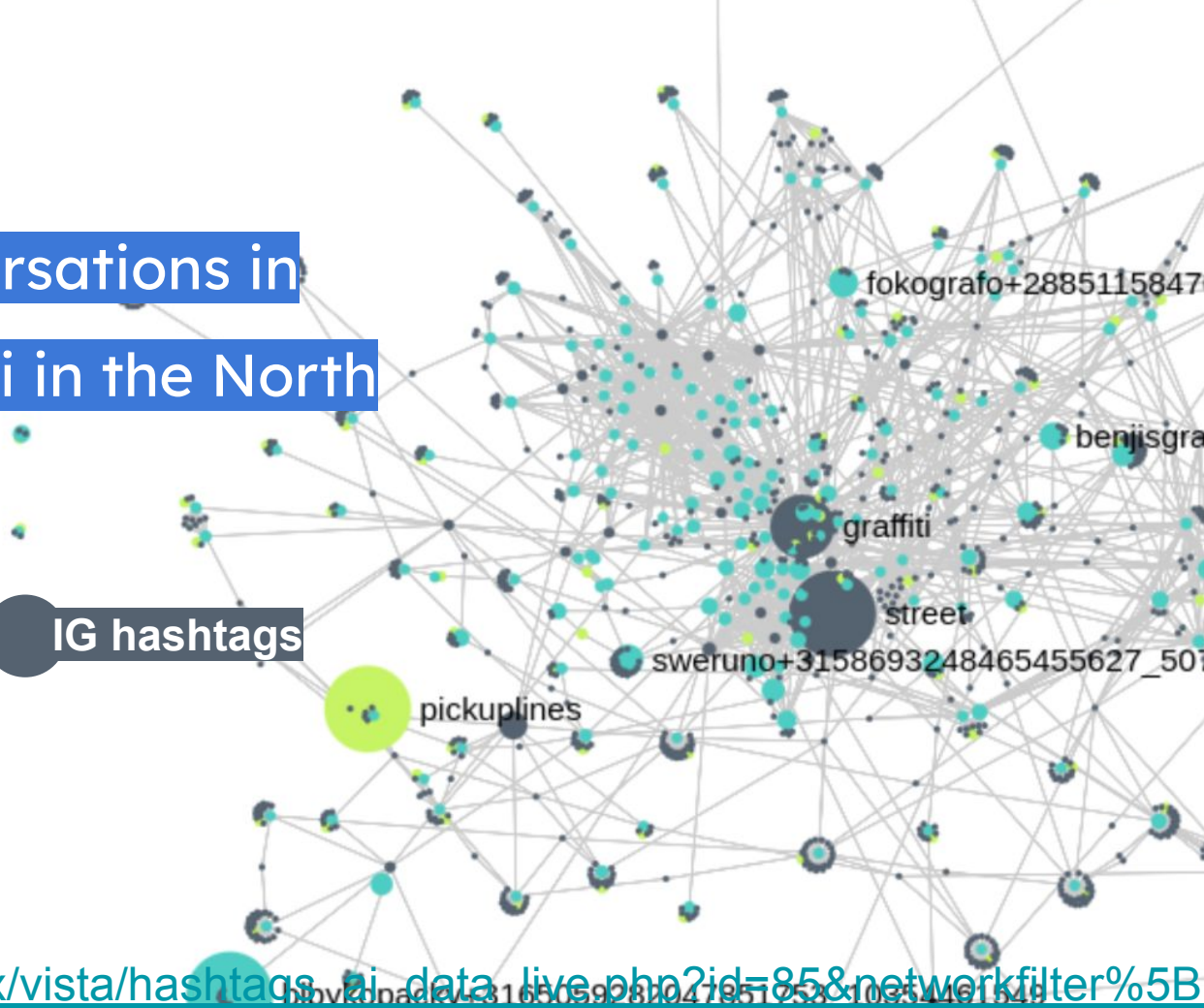
[ **data** ] → is the link between:

exec devices

disciplines

programming languages

theoretical frameworks

dev libraries

social phenomena

Interoperability

exec devices

disciplines

programming languages

theoretical frameworks

dev libraries

social phenomena

it's only possible through Open Source

& [**data**]

# // "Grafiti de firma" as symbolic form == systemicElements()
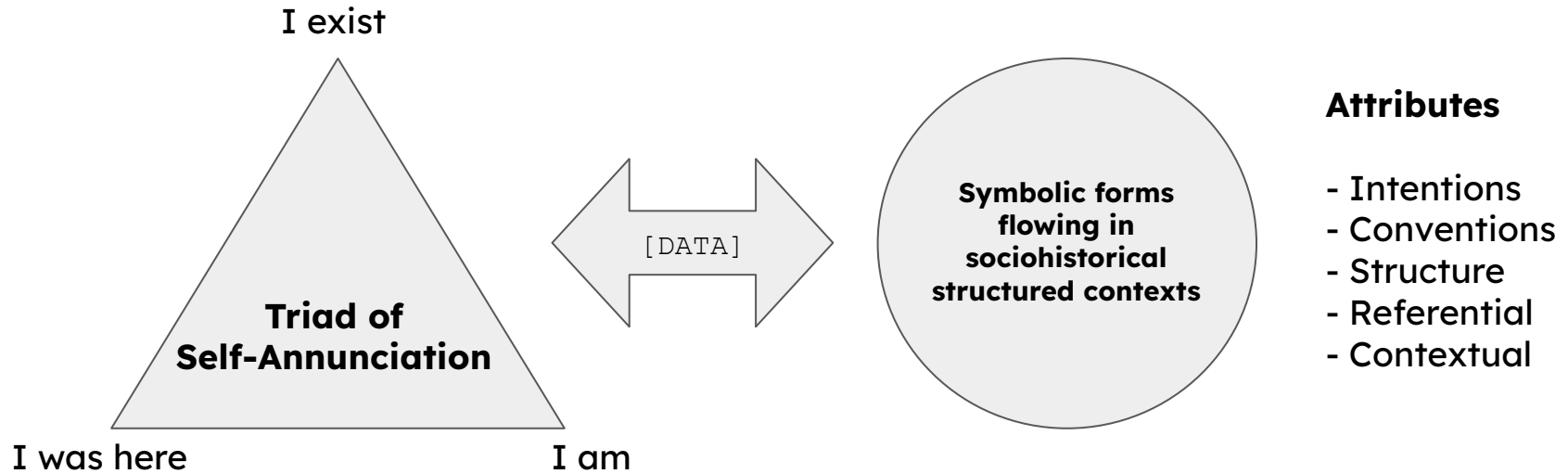
I exist

Triad of
Self-Annunciation

I was here

I am

[DATA]

Symbolic forms
flowing in
sociohistorical
structured contexts

**Attributes**

- Intentions
- Conventions
- Structure
- Referential
- Contextual

>> El grafiti de firma: un recorrido histórico-social por el grafiti de ayer y hoy, 2014 @ Figueroa

>> Ideology and Modern Culture, 1991 @ Thompson

// Hashtag analysis and categorization

| user_id | MUID | pk | m_id | taken_at | media_type | product_type | location |
|---|---|---|---|---|---|---|---|
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950561947252090455 | 2950561947252090455_267820760 | 2022-10-16 21:06:55 | 1 | feed | None |
| oddiophoto | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950392996768278801 | 2950392996768278801_1381007251 | 2022-10-16 15:31:14 | 1 | feed | pk=107711604 name='Portland, Oregon' phone='' webs... |
| gooseonacruise | freightgraffiti_1_hashtagTop_9_5d8799fe | 2948334126240755324 | 2948334126240755324_55697889154 | 2022-10-13 19:20:38 | 1 | feed | None |
| portlandpizzas | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950078322945060738 | 2950078322945060738_48190545613 | 2022-10-16 05:06:02 | 1 | feed | None |
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2948652244577850850 | 2948652244577850850_267820760 | 2022-10-14 05:52:40 | 1 | feed | None |
| train.monikers | freightgraffiti_1_hashtagTop_9_5d8799fe | 2260625654332949578 | 2260625654332949578_12974181395 | 2020-03-08 22:46:39 | 1 | feed | None |
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2549792432173692354 | 2549792432173692354_267820760 | 2021-04-11 22:09:26 | 1 | feed | None |

[DATA]

**communalities**

**I exist**
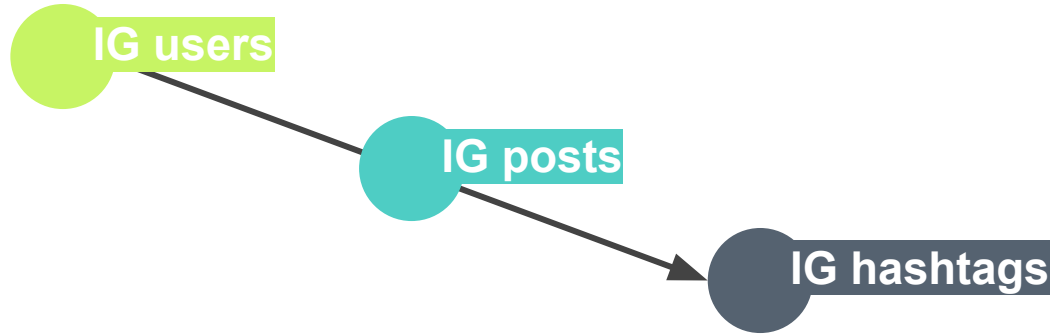
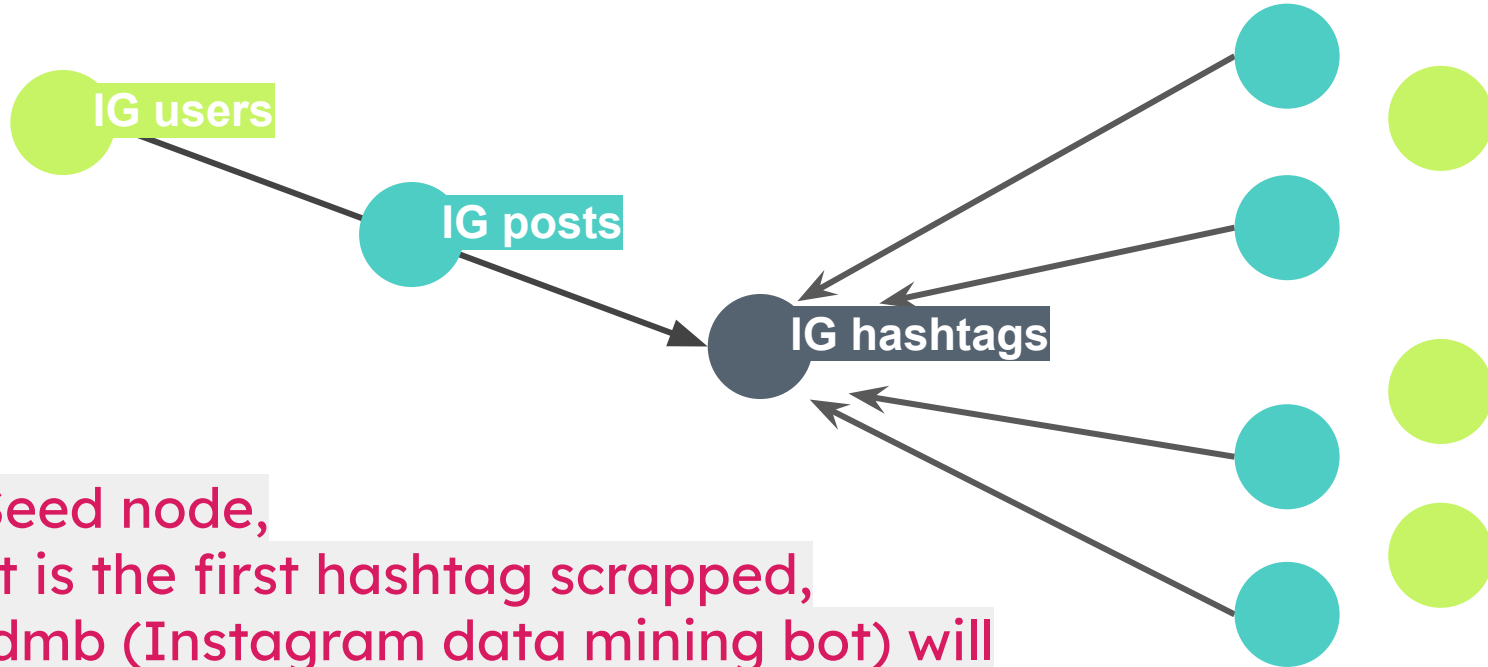**Triad of Self-Annunciation**

**I was here**

**geographies**

**I am**

**entities**

# // Get (scrap, mine, backup) hypertextual conversations

// Get (scrap, mine, backup) hypertextual conversations

IG users

IG posts

IG hashtags

Seed node,
It is the first hashtag scrapped,
idmb (Instagram data mining bot) will
download n post's and add new hashtags
founded as mining tasks

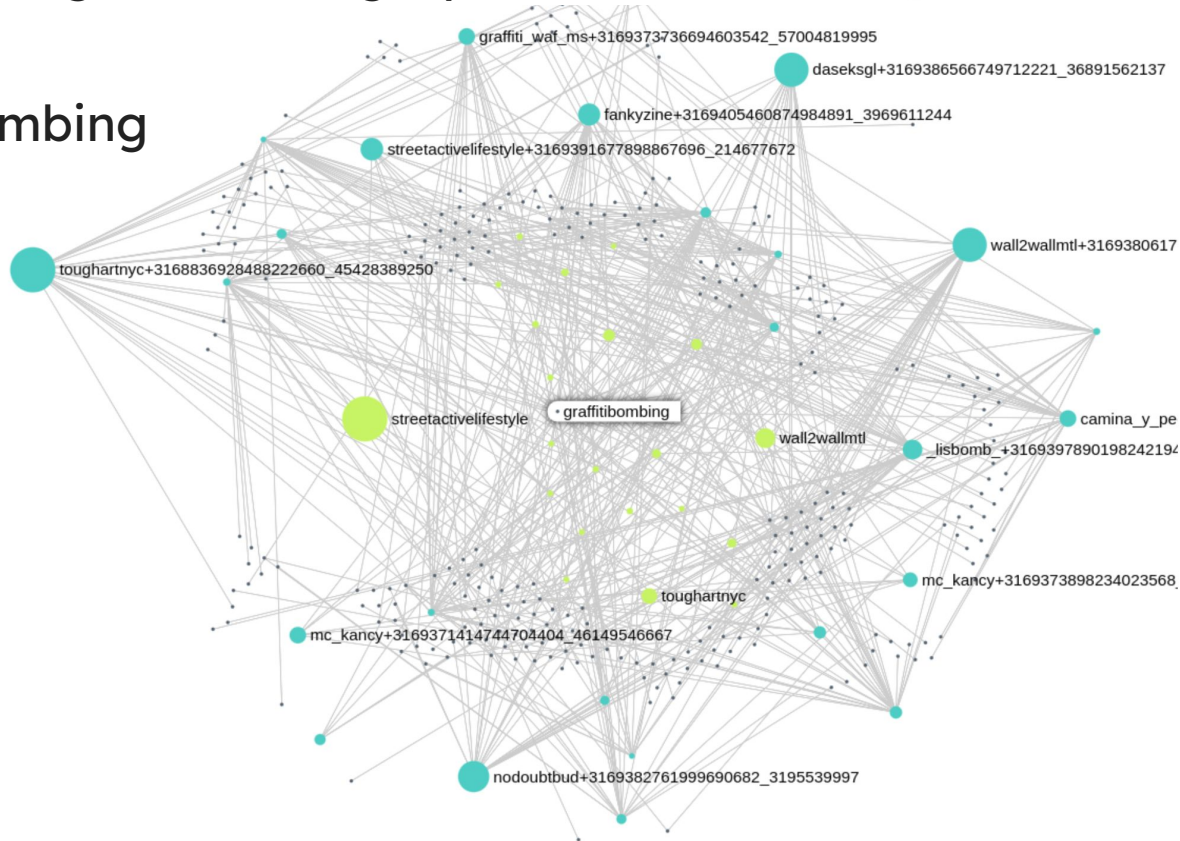# // Get (scrap, mine, backup) hypertextual conversations
## MUID: graffitibombing_0_hashtagTop_30_cb6540ce

seednode: graffitibombing

mining depth: 0

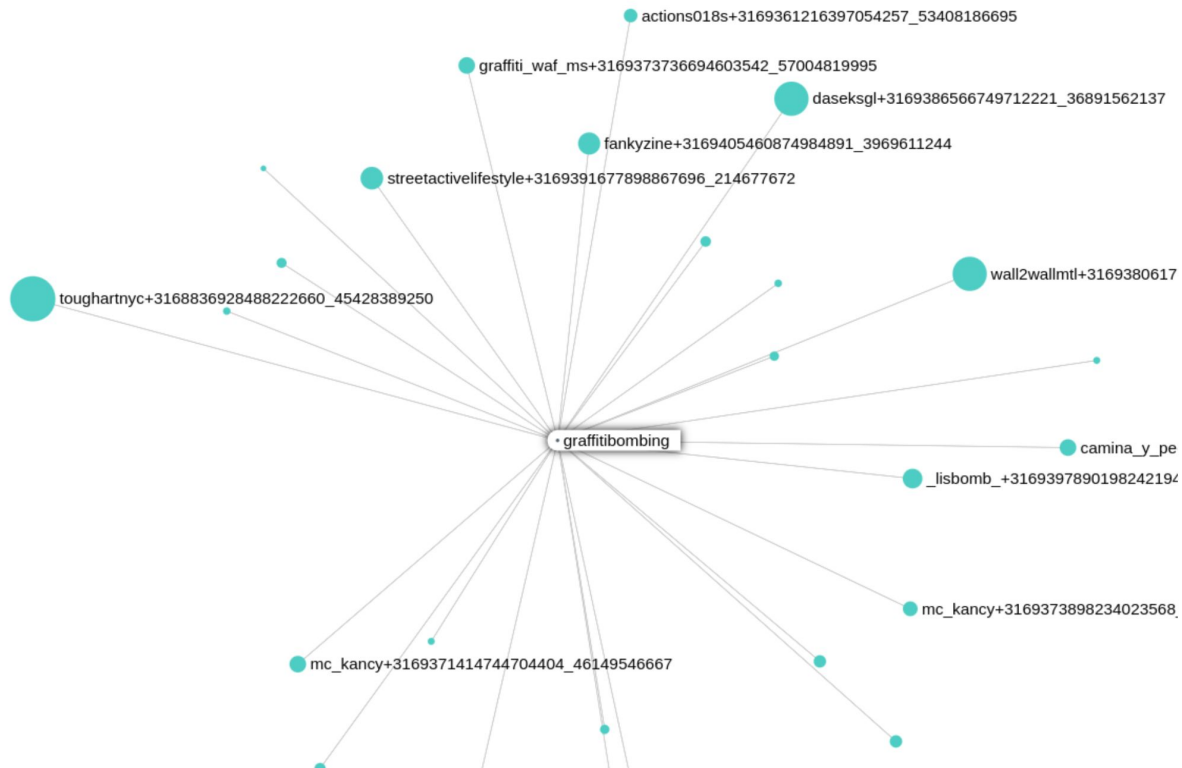type: hashtagtop

post amount: 30

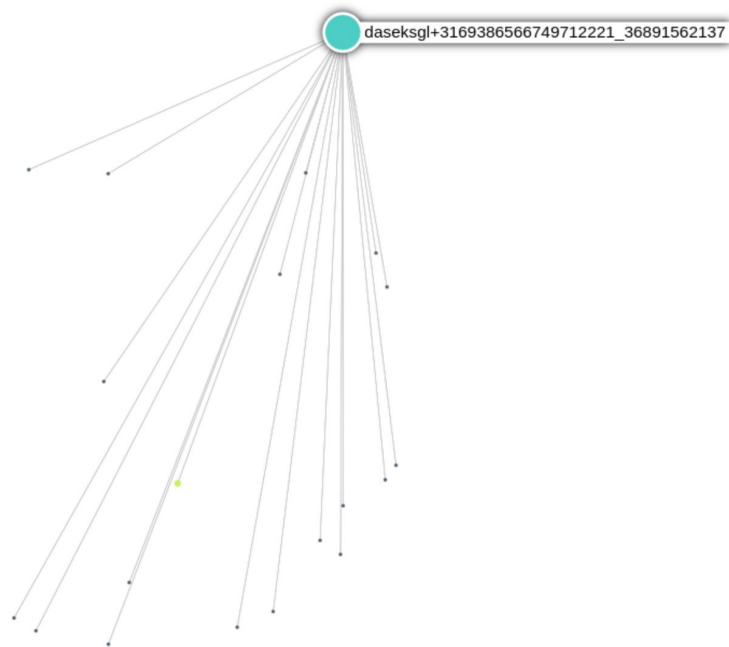# // Get (scrap, mine, backup) hypertextual conversations



actions018s+3169361216397054257_53408186695

graffiti_waf_ms+3169373736694603542_57004819995

daseksgl+3169386566749712221_36891562137

fankyzine+3169405460874984891_3969611244

streetactivelifestyle+3169391677898867696_214677672

wall2wallmtl+3169380617

toughartnyc+3168836928488222660_45428389250

graffitibombing

camina_y_pe

_lisbomb_+316939789019824219

mc_kancy+3169373898234023568

mc_kancy+3169371414744704404_46149546667

0682_3195539997

# #graffitibombing neighbors, 30 IG posts.

daseksgl+3169386566749712221_36891562137

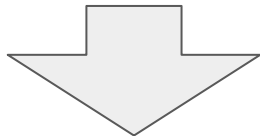@dasekgl instagram post using 18 hashtags

# // Get (scrap, mine, backup) hypertextual conversations
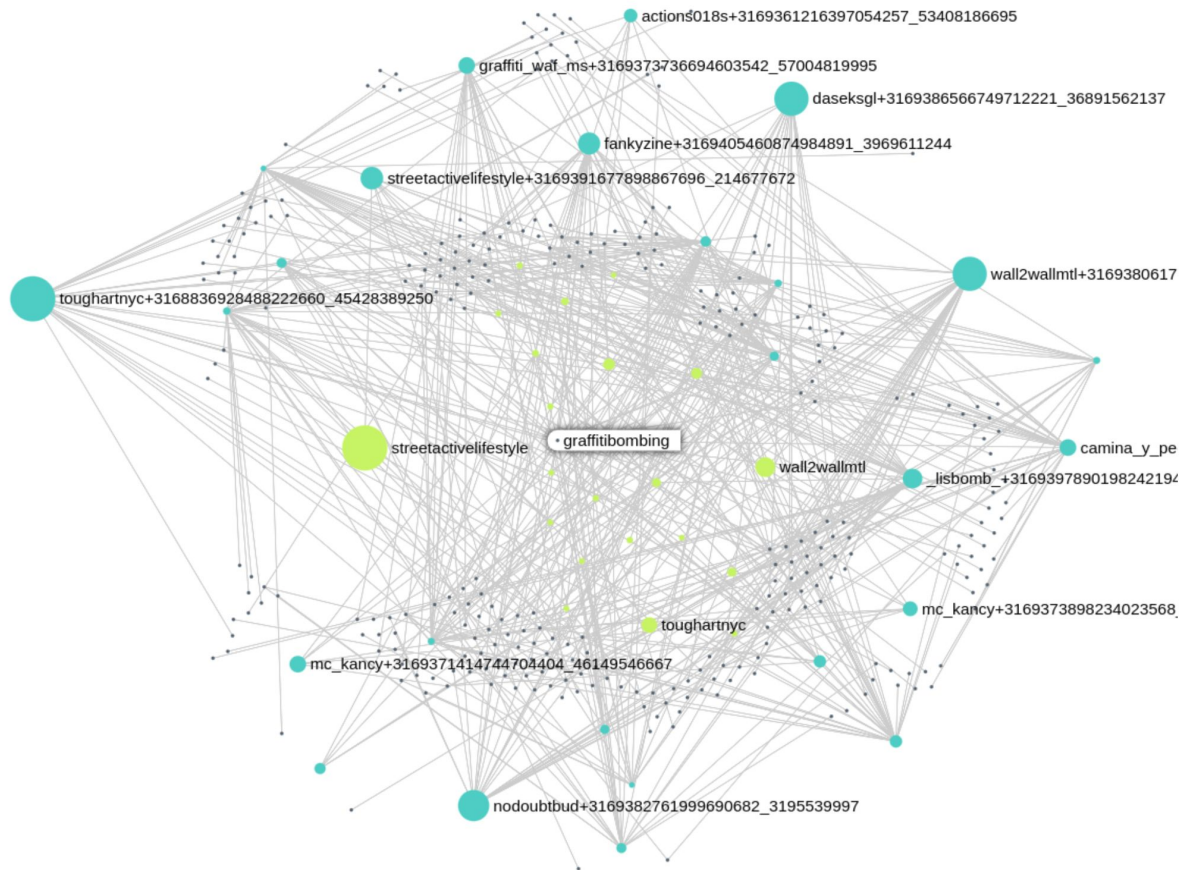
# Instagrapi - Unofficial Instagram API for Python -> idmb

https://github.com/subzeroid/instagrapi
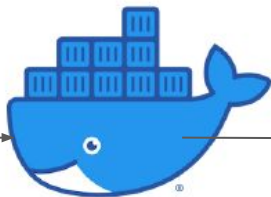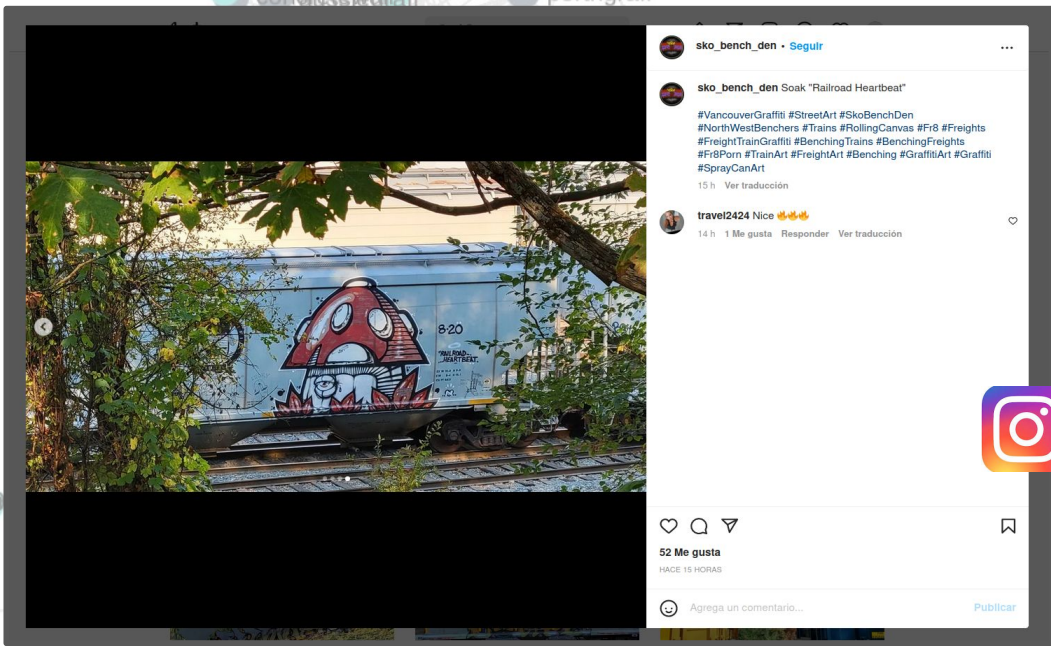
https://github.com/abundis-rmn2/idmb

**git clone https://github.com/abundis-rmn2/idmb.git**
**cd idmb**
**docker build -t idmb .**

docker run -it --name b2a -d idmb
**docker exec -t b2a python py/login.py**
-usr betitoprendido2 -pass *1#Automatico23
**docker exec -t b2a python py/queue_sql_web.py**
-batch_size=20 -starting=0 -sleep_time=5 -big_sleep=10
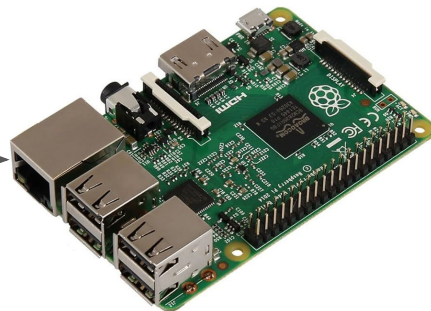
- Multimedia (image, video)
- Username
- Caption
  - Hashtags
- Metadata
  - # likes
  - # comments

**SQL database**

| user_id | MUID | pk | m_id | taken_at | media_type | product_type | location |
|---|---|---|---|---|---|---|---|
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950561947252090455 | 2950561947252090455_267820760 | 2022-10-16 21:06:55 | 1 | feed | None |
| oddiophoto | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950392996768278801 | 2950392996768278801_1381007251 | 2022-10-16 15:31:14 | 1 | feed | pk=107711604 name='Portland, Oregon' phone='' webs... |
| gooseonacruise | freightgraffiti_1_hashtagTop_9_5d8799fe | 2948334126240755324 | 2948334126240755324_55697889154 | 2022-10-13 19:20:38 | 1 | feed | None |
| portlandpizzas | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950078322945060738 | 2950078322945060738_48190545613 | 2022-10-16 05:06:02 | 1 | feed | None |
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2948652244577850850 | 2948652244577850850_267820760 | 2022-10-14 05:52:40 | 1 | feed | None |
| train.monikers | freightgraffiti_1_hashtagTop_9_5d8799fe | 2260625654332949578 | 2260625654332949578_12974181395 | 2020-03-08 22:46:39 | 1 | feed | None |
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2549792432173692354 | 2549792432173692354_267820760 | 2021-04-11 22:09:26 | 1 | feed | None |

sko_bench_den · Seguir

sko_bench_den Soak "Railroad Heartbeat"

#VancouverGraffiti #StreetArt #SkoBenchDen #NorthWestBenchers #Trains #RollingCanvas #Fr8 #Freights #FreightTrainGraffiti #BenchingTrains #BenchingFreights #Fr8Porn #TrainArt #FreightArt #Benching #GraffitiArt #Graffiti #SprayCanArt

15 h   Ver traducción

travel2424 Nice 🔥🔥🔥
14 h   1 Me gusta   Responder   Ver traducción

52 Me gusta

HACE 15 HORAS

Agrega un comentario...   Publicar

// Hashtag analysis and categorization

| user_id | MUID | pk | m_id | taken_at | media_type | product_type | location |
|---------|------|-----|------|----------|------------|--------------|----------|
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950561947252090455 | 2950561947252090455_267820760 | 2022-10-16 21:06:55 | 1 | feed | None |
| oddiophoto | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950392996768278801 | 2950392996768278801_1381007251 | 2022-10-16 15:31:14 | 1 | feed | pk=107711604 name='Portland, Oregon' phone='' webs... |
| gooseonacruise | freightgraffiti_1_hashtagTop_9_5d8799fe | 2948334126240755324 | 2948334126240755324_55697889154 | 2022-10-13 19:20:38 | 1 | feed | None |
| portlandpizzas | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950078322945060738 | 2950078322945060738_48190545613 | 2022-10-16 05:06:02 | 1 | feed | None |
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2948652244577850850 | 2948652244577850850_267820760 | 2022-10-14 05:52:40 | 1 | feed | None |
| train.monikers | freightgraffiti_1_hashtagTop_9_5d8799fe | 2260625654332949578 | 2260625654332949578_12974181395 | 2020-03-08 22:46:39 | 1 | feed | None |
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2549792432173692354 | 2549792432173692354_267820760 | 2021-04-11 22:09:26 | 1 | feed | None |

[DATA]

**communalities**

**I exist**

Triad of
Self-Annunciation

**I was here**
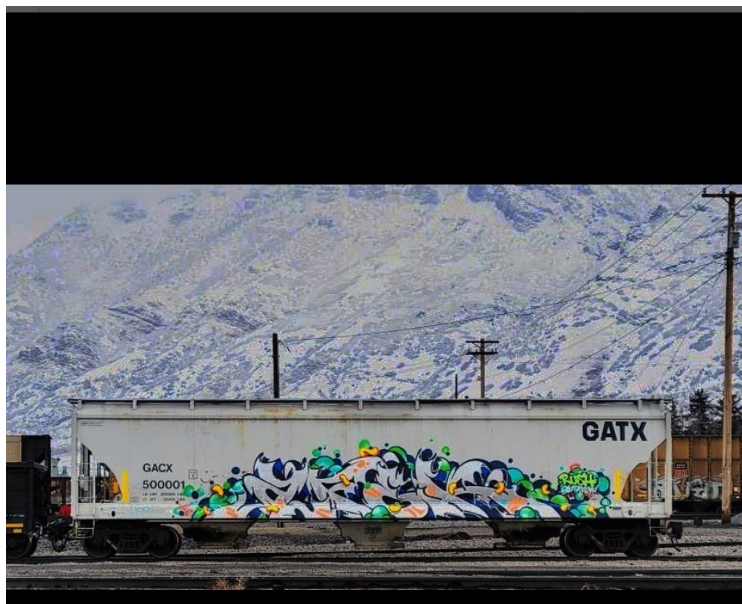
**geographies**

**I am**

**entities**

# // Hashtags as symbolic forms > Text Analysis with spaCy

>> El grafiti de firma: un recorrido histórico-social por el grafiti de ayer y hoy, 2014 @ Figueroa
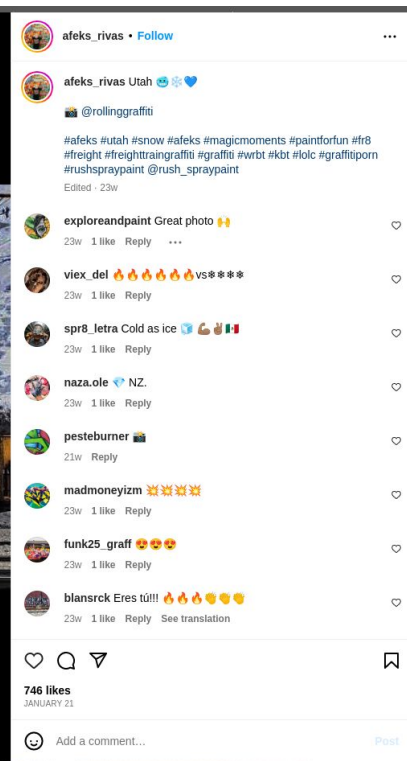
**communalities**

**geographies**

**entities**



#afeks #utah #snow #afeks #magicmoments #paintforfun #fr8
#freight #freighttraingraffiti #graffiti #wrbt #kbt #lolc #graffitiporn
#rushspraypaint @rush_spraypaint

Edited · 23w

>> El grafiti de firma: un recorrido histórico-social por el grafiti de ayer y hoy, 2014 @ Figueroa

**hashtag_splitter_tagger()**

https://stackoverflow.com/questions/20516100/term-split-by-hashtag-of-multiple-words/20518476#20518476

**communalities**

In Diccionary> if (word == graffitiLingo.[])
In Diccionary > if (word == railroadLingo.[])

**geographies**

In Diccionary > if (word == naCities() ) *geonamescache

**entities**

Out of Vocabulary > if (word != WordsOfWorld.[] )
                                          > if (word > 4) = writer
                                          > else if (word < 4) = crew
In tags we trust > if word && "graffiti" in caption)

# // Hashtags as symbolic forms > Text Analysis with spaCy

Image from ML inference (if available)



Post data

- User: joint_pugo_kill
- Posted @: 2022-03-27 15:38:03
- Comments: 1
- Likes: 47
- Media type:feed
- Hashtags:["kudo", "rushspraypaint", "bubblestyle", "graffittichinatown", "throwup", "ekaterinburgthrowup", "throwupcult"]
- Text inference:[["throwup", "graffiti_lingo", "throwup"], ["throwupcult", "graffiti_lingo", "throwup"], ["bubblestyle", "graffiti_lingo", "bubblestyle"], ["ekaterinburgthrowup", "graffiti_lingo", "throwup"], ["rushspraypaint", "graffiti_lingo", "paint"], ["kudo", "entity", "writer", "kudo"], ["graffittichinatown", "graffiti_lingo", "graff"]]
- Image inference:[["Bomba", 0.9894751310348511], ["Tag", 0.6429327130317688]]

```
// [hashtag, type of term founded, term InDict - OoV]
var textInference =
["throwup", "graffiti_lingo", "throwup"],
["throwupcult", "graffiti_lingo", "throwup"],
["bubblestyle", "graffiti_lingo", "bubblestyle"],
["ekaterinburgthrowup", "graffiti_lingo", "throwup"],
["rushspraypaint", "graffiti_lingo", "paint"],
["kudo", "entity", "writer", "kudo"],
["graffittichinatown", "graffiti_lingo", "graff"]]
```

**{each inference is stored in a SQL Database, and from there, we start the social analysis}**

>> afeks_1_hashtagTop_9_7052518d

>> term: graffiti_lingo.dict() > art

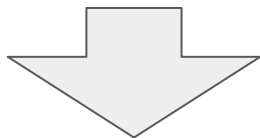{each inference is stored in a **SQL Database**, and from there, we start the social analysis}
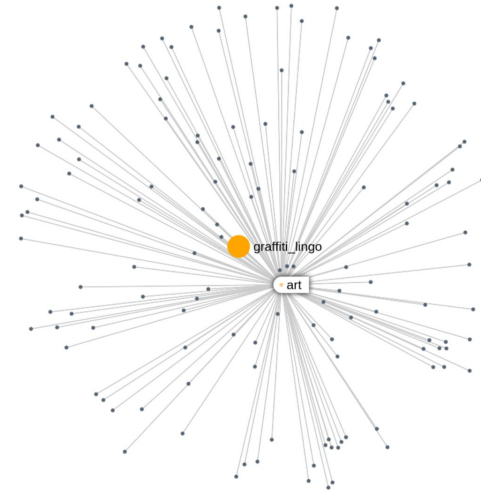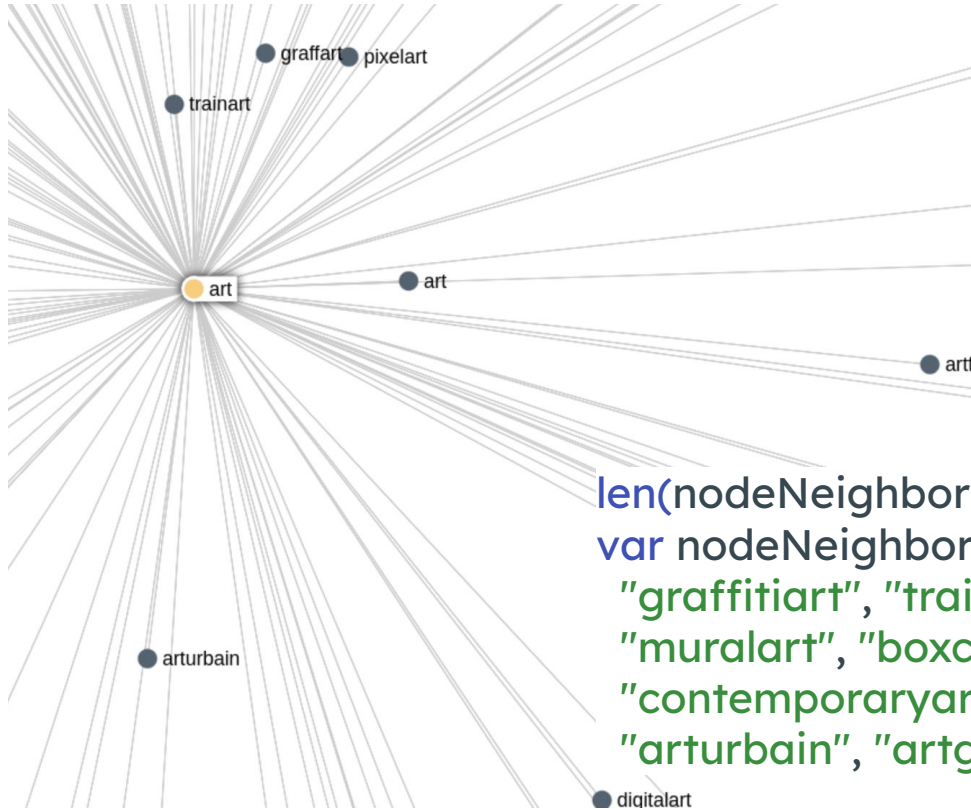


len(nodeNeighbors) = 131
var nodeNeighbors = [
  "graffitiart", "trainart", "graffart", "pixelart",
  "muralart", "boxcarart", "freightart", "art",
  "contemporaryart", "artderue", "sprayart", "instaart",
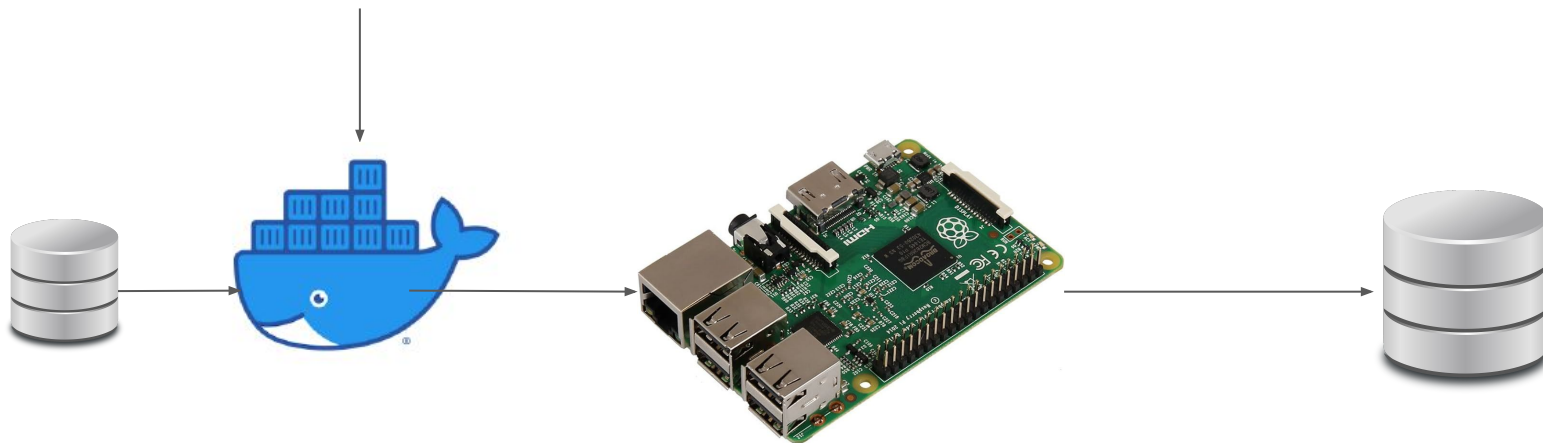  "arturbain", "artgram", "vandalart", ... ];

# sPacy - Industrial-strength NLP



https://github.com/explosion/spaCy

https://github.com/abundis-rmn2/
graffiti_detection_OD_TF

**https://github.com/abundis-rmn2/Spacy-Hashtag-Geolocator**
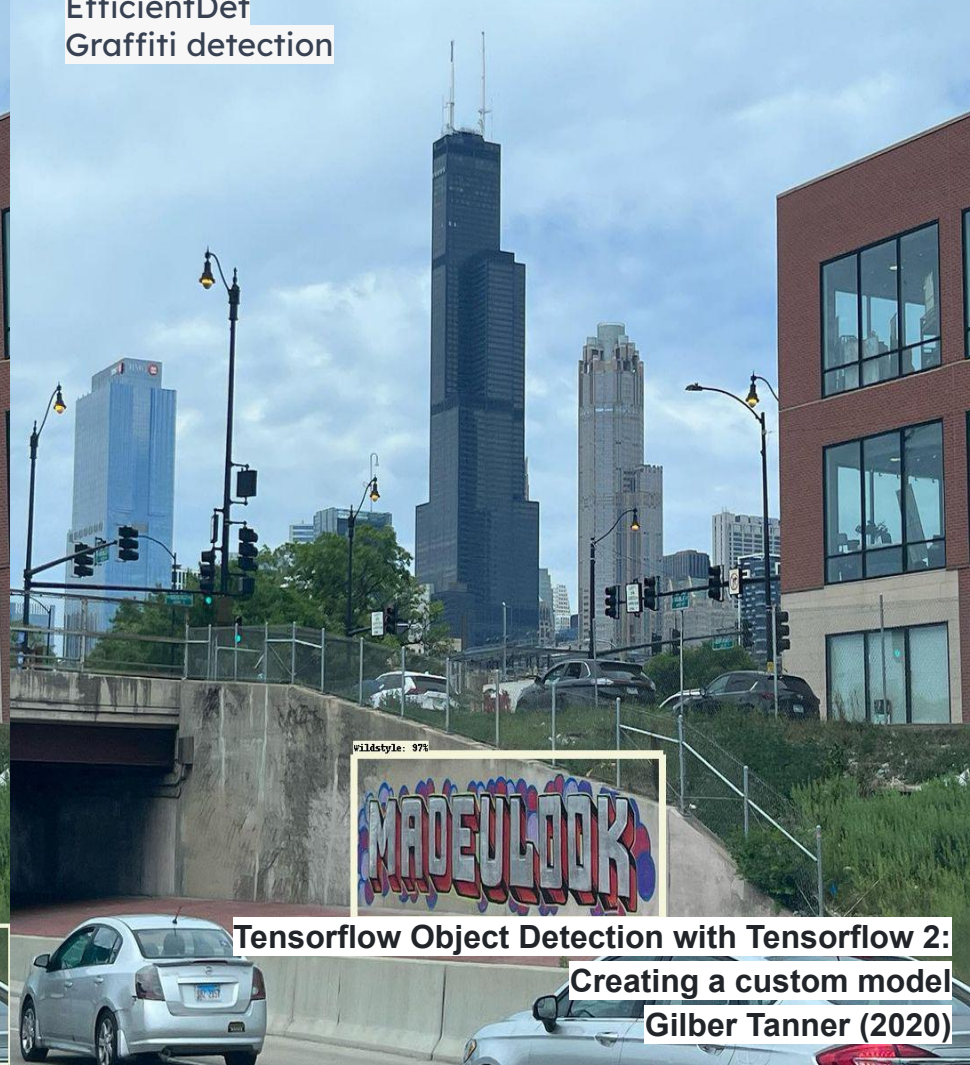**cd Spacy-Hashtag-Geolocator**
**docker build -t hashtags .**

docker run -it --name hash2 -d hashtags
**docker exec -t hash2 python test.py**
**-MUID=fr8porn_1_hashtagTop_9_3bf76f18**

Faster R-CNN
Open Images V4
Inception ResNet V2
@Google

Skyscraper: 76%

Skyscraper: 71%

Window: 66%

Street light: 65%

Window: 51%

Car: 97%

Car: 95%

EfficientDet
Graffiti detection

Wildstyle: 97%

**Tensorflow Object Detection with Tensorflow 2:**
**Creating a custom model**
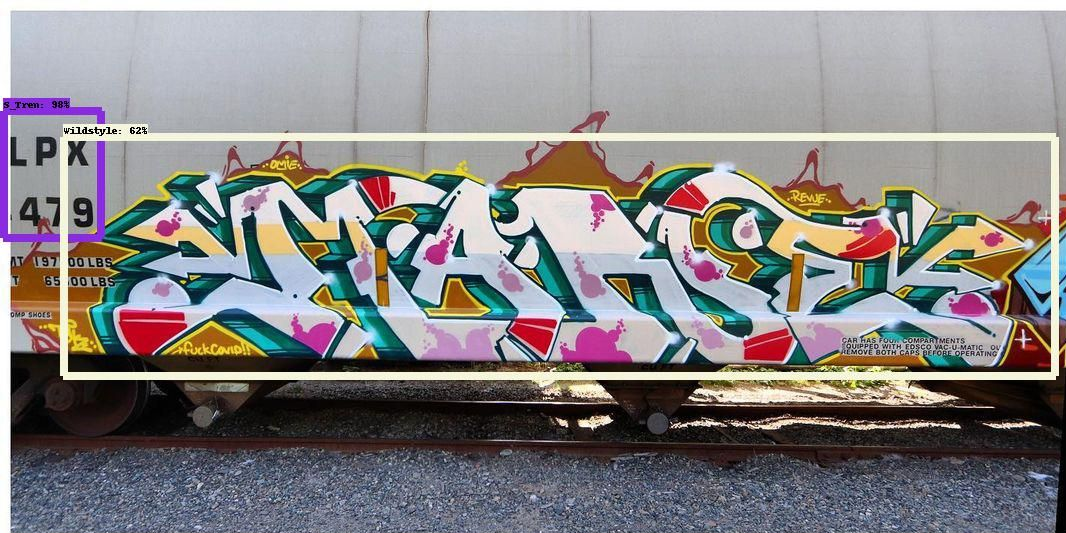**Gilber Tanner (2020)**

# Model Inference

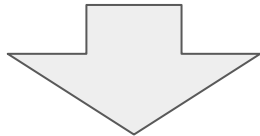User: b.gnarley

Posted @: 2023-05-31 22:27:07

Image inference:

[["S_Tren", 0.9833754897117615],

["Wildstyle", 0.754450798034668],

["Wildstyle", 0.6232936978340149]]

{each inference is stored in a **SQL Database**, and from there, we start the social analysis.}

# TensorFlow - Custom Model



https://www.tensorflow.org/?hl=es

https://github.com/abundis-rmn2/
graffiti_detection_OD_TF



**Inference SQL** ☆
Archivo Editar Ver Insertar Entorno de ejecución Herramientas Ayuda   Última modificación: 27 de enero

+ Código   + Texto

```
[ ]  MUID = "nogalesbench_1_hashtagTop_9_704dd528"

[ ]  !pip install pillow-heif

[ ]  !pip install mysql-connector

 ▶   #the TensorFlow Model Garden repository
     !git clone https://github.com/tensorflow/models.git
```

+ Código   + Texto
Añadir celda de texto

```
[ ]  !apt-get install protobuf-compiler python-lxml python-pil
     !pip install Cython pandas tf-slim lvis

[ ]  #cd into 'TensorFlow/models/research'
     %cd '/content/models/research'
     !protoc object_detection/protos/*.proto --python_out=.

[ ]  import os
     import sys
     os.environ['PYTHONPATH']+=":/content/models"
     sys.path.append("/content/models/research")

[ ]  !ls

[ ]  !python /content/models/research/object_detection/packages/tf2/setup.py build
     !python /content/models/research/object_detection/packages/tf2/setup.py install

[ ]  #cd into 'TensorFlow/models/research/object_detection/builders/'
     %cd '/content/models/research/object_detection/builders/'
     !python model_builder_tf2_test.py
     from object_detection.utils import label_map_util
```
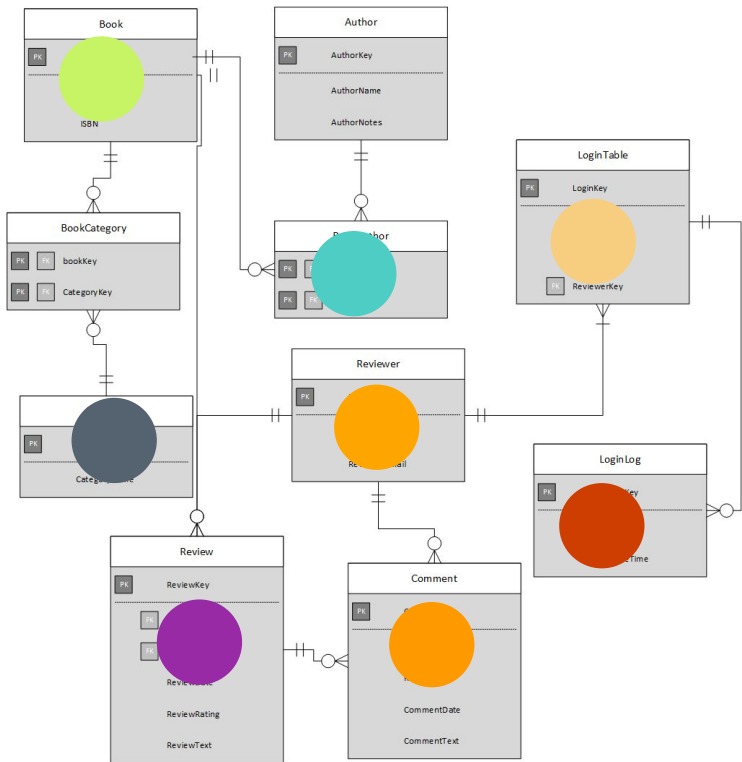
# Relational databases == [data]



IG users

IG posts

IG hashtags

graffiti_dict

railroad_dict

city_dict

term

crew_cat

writer_cat

entity

Graffiti type

gif: envatotuts+ / Relational Databases for dummies

# Building JSON file from SQL == [MUID]

https://graphology.github.io/

https://www.sigmajs.org/



| user_id | MUID | pk | m_id | taken_at | media_type | product_type | location |
|---|---|---|---|---|---|---|---|
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950561947252090455 | 2950561947252090455_267820760 | 2022-10-16 21:06:55 | 1 | feed | None |
| oddiophoto | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950592996768278801 | 2950592996768278801_1381007251 | 2022-10-16 15:31:14 | 1 | feed | pk=107711604 name='Portland, Oregon' phone='' webs... |
| gooseonacruise | freightgraffiti_1_hashtagTop_9_5d8799fe | 2948334126240755324 | 2948334126240755324_55697889154 | 2022-10-13 19:20:38 | 1 | feed | None |
| portlandpizzas | freightgraffiti_1_hashtagTop_9_5d8799fe | 2950078322945060738 | 2950078322945060738_48190545613 | 2022-10-16 05:06:02 | 1 | feed | None |
| pacificnorthbench | freightgraffiti_1_hashtagTop_9_5d8799fe | 2948652244577850850 | 2948652244577850850_267820760 | 2022-10-14 05:52:40 | 1 | feed | None |
| train.monikers | freightgraffiti_1_hashtagTop_9_5d8799fe | 2260625654332949578 | 2260625654332949578_12974181395 | 2020-03-08 22:46:39 | 1 | feed | None |
| pacificnorthbench | hashtagTop_9_5d8799fe | 2549792432173692354 | 2549792432173692354_267820760 | 2021-04-11 22:09:26 | 1 | feed | None |

PHP

JSON network

graphologie SigmaJS
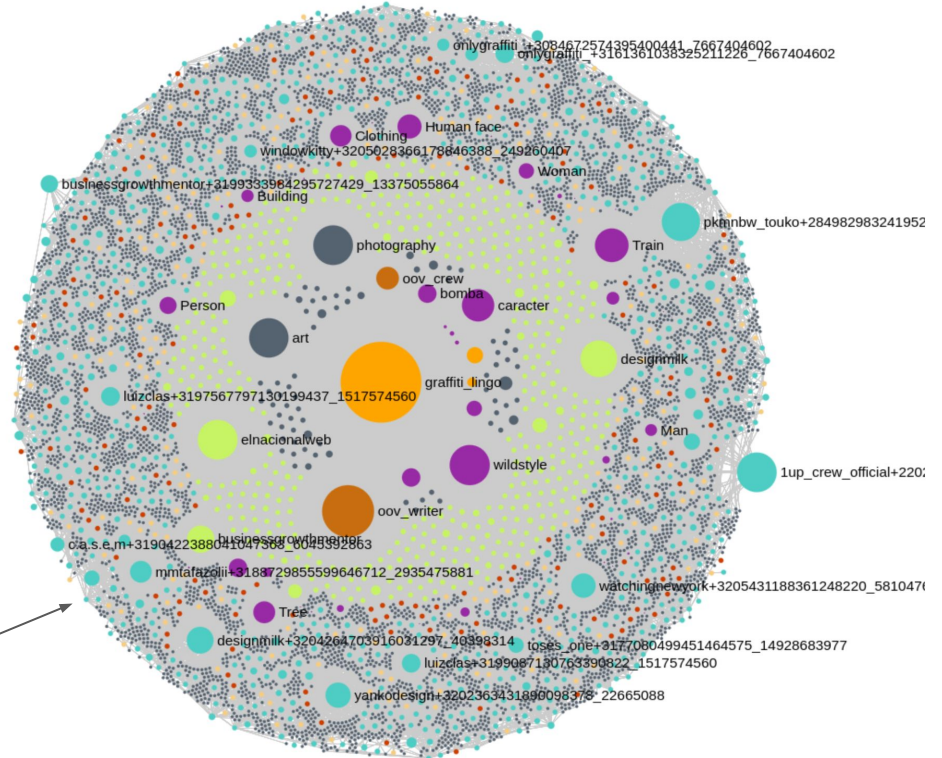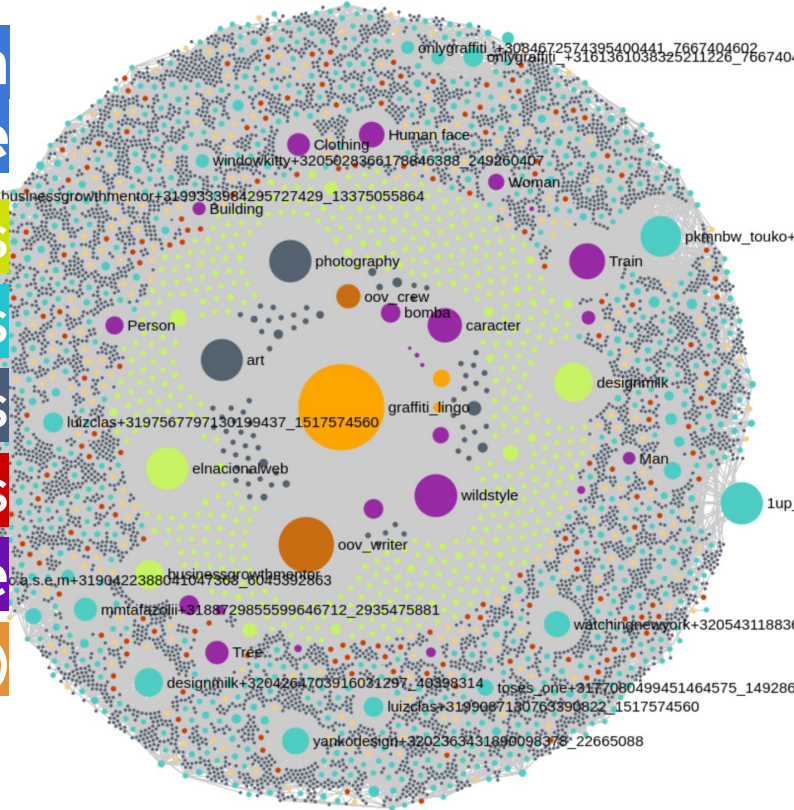
# Node reduction the shortest path to the "meaning"
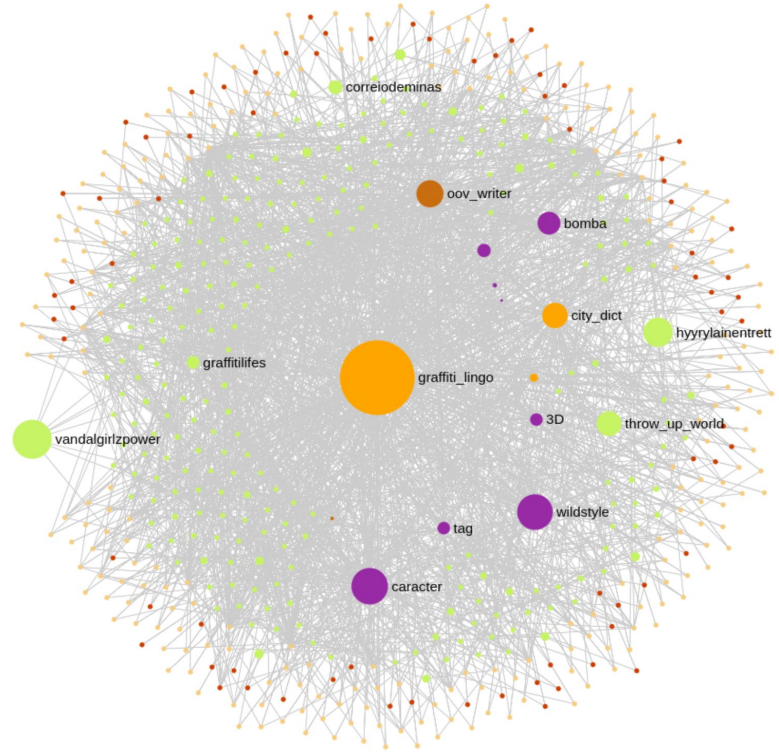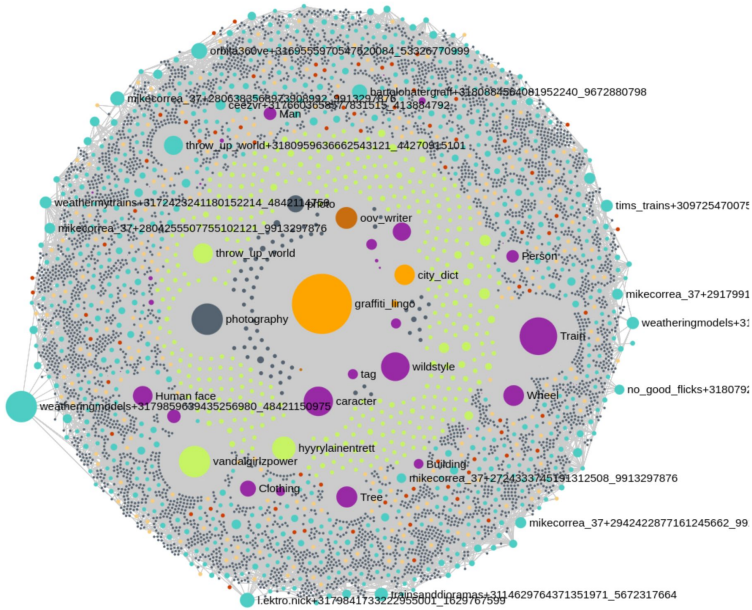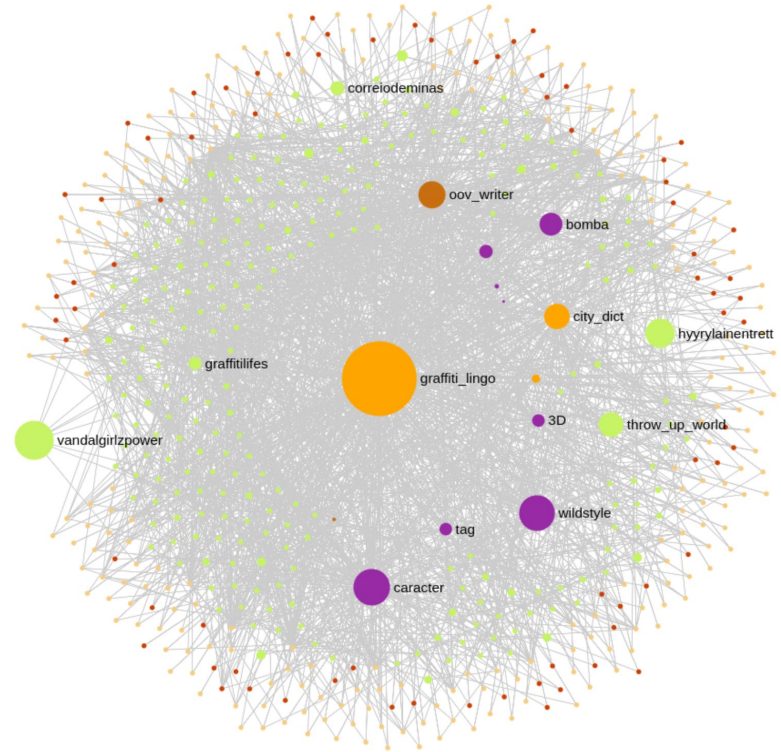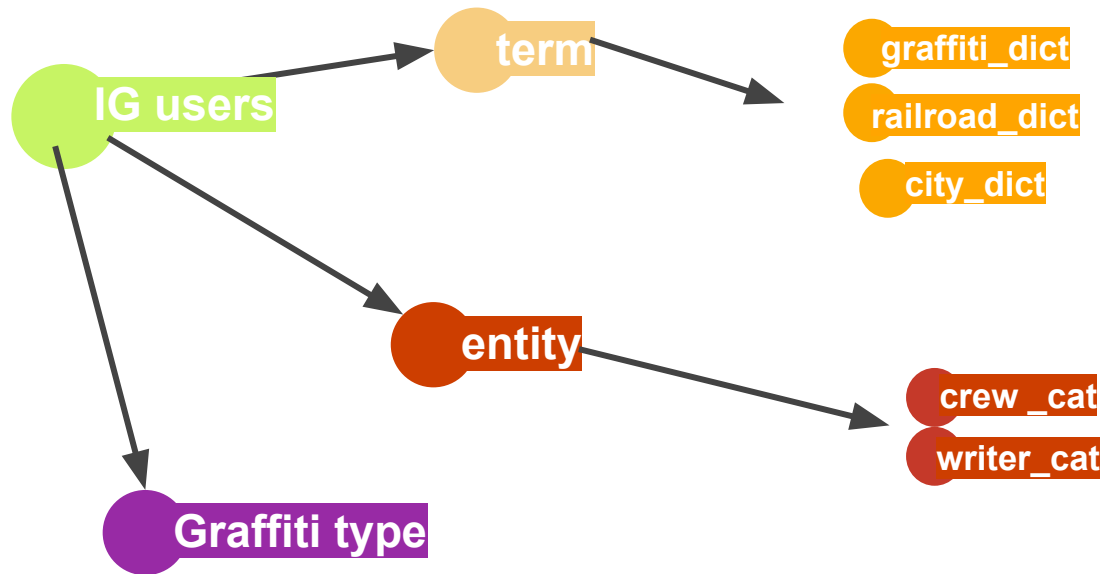
# Node reduction the shortest path to the "meaning"

>> for each user node

    & for each node of the whole network

        if node is inference and is 3 steps >

            link user to inference

            & delete node (hashtag, user, post)

        else

            delete node

// Node reduction may be one kind of abstraction ( ? )

IG users → term → graffiti_dict, railroad_dict, city_dict

IG users → entity → crew _cat, writer_cat
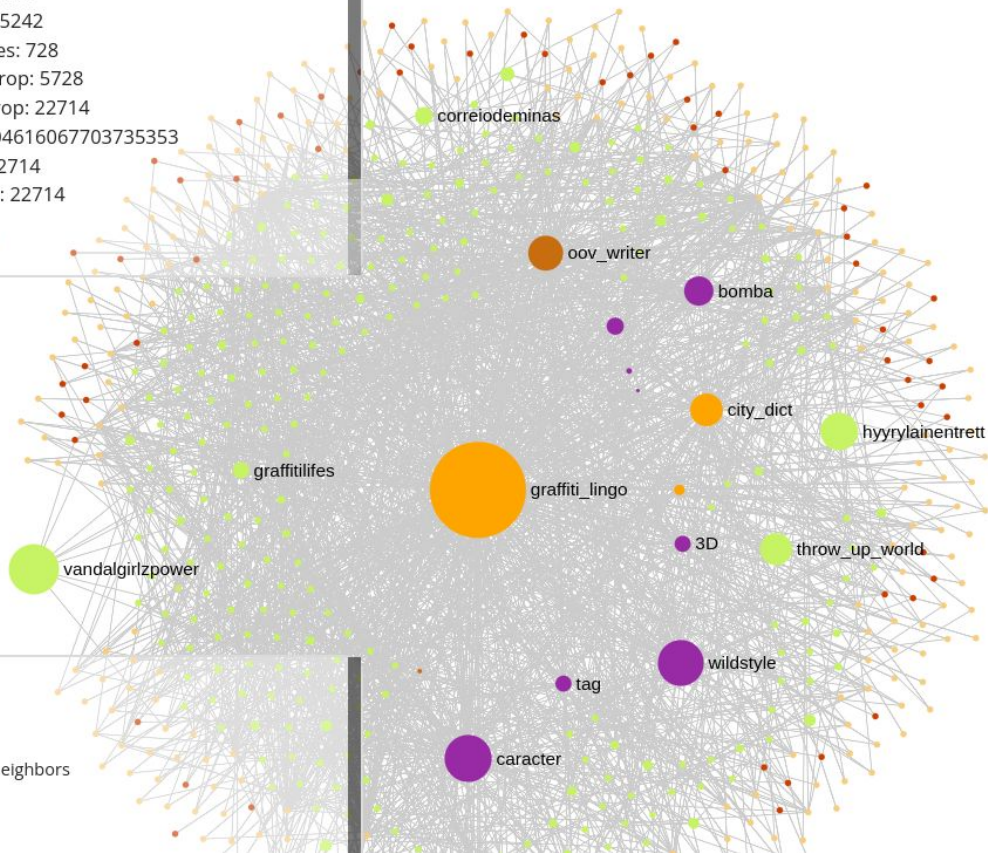
IG users → Graffiti type

Network Graph

Graph Stats

- Total nodes: 6456
- Total edges: 25242
- Dropped nodes: 728
- Nodes after drop: 5728
- Edges after drop: 22714
- Density: 0.00046160677037353353
- Simple size: 22714
- Weighted size: 22714

Click History: Delete

nodeReducerDepth *

◉ selectedNeighbors

○ selectedNeighborsNeighbors

statsVis

correiodeminas

oov_writer

bomba

city_dict

hyyrylainentrett

graffitilifes

graffiti_lingo

3D

throw_up_world

vandalgirlzpower

wildstyle

tag

caracter